

SAN FRANCISCO FORECAST DISTRICT.

The month was one of nearly normal conditions, except that there was less rain than usual. The unexpected development of a high area on the north Pacific coast on the 7th caused clear, cold weather in California and Nevada, with heavy frosts in mountain sections. This high practically controlled conditions until the middle of the month. Another high area controlled the weather from the 18th to the 22d.—*A. G. McAdie, Professor and District Forecaster.*

PORTLAND FORECAST DISTRICT.

A stormy period set in on the 1st which culminated on the 6th in one of the worst gales ever known so early in the season. The North Head and Tatoosh Island stations reported maximum wind velocities of 72 miles from the southeast and east, respectively, on that date; at Seattle the maximum velocity was 48 miles from the south and at Tacoma it was 40 miles from the southwest. Warnings for this series of storms were issued well in advance of their occurrence and the casualties that occurred were of minor importance. Other gales occurred on the 17th and the 24th for which warnings were issued. No storms occurred without warnings.

On the 10th, killing frosts occurred in the sections of the

districts east of the Cascade Mountains, and on the 18th, killing frosts were reported generally in the western sections. The frost warnings issued in the sections of the district east of the Cascade Mountains were timely, but those issued for localities west of the Cascade Mountains were only partially verified.—*E. A. Beals, District Forecaster.*

RIVERS AND FLOODS.

The work of the River and Flood Service was practically featureless during the month. In nearly all the rivers the stages of water were lower than during the month immediately preceding, although not quite so low as is usual during the month of October. There was, however, sufficient water for steamboat traffic in the navigable rivers, except the Tennessee.

The highest and lowest water, mean stage, and monthly range at 270 river stations are given in Table VI. Hydrographs for typical points on seven principal rivers are shown on Chart V. The stations selected for charting are Keokuk, St. Louis, Memphis, Vicksburg, and New Orleans, on the Mississippi; Cincinnati and Cairo, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.—*H. C. Frankenfield, Professor of Meteorology.*

CLIMATE AND CROP SERVICE.

By Mr. JAMES BERRY, Chief of Climate and Crop Division.

The following summaries relating to the general weather and crop conditions during October are furnished by the directors of the respective sections of the Climate and Crop Service of the Weather Bureau; they are based upon reports from cooperative observers and crop correspondents, of whom there are about 3300 and 14,000, respectively:

Alabama.—The weather was wet and unfavorable for maturing and gathering cotton and corn, though fairly favorable for late minor crops. Some cool nights, with heavy to killing frosts, but latter too late for material damage. Rain damaged much open cotton and retarded picking, though about nine-tenths of the crop was gathered by the close of the month, with generally light yield. Corn yielded well, but the quality was inferior and the crop was not all housed. Minor crops were satisfactory. Little fall plowing or seeding was done.—*F. P. Chaffee.*

Arizona.—Rainfall greatly deficient. Temperature evenly distributed. Frost injured fruit and vegetables slightly. Plowing extensive toward the latter part of the month; very little grain sown. Cutting of corn completed over the south, much unmaturing over the central section. Fall and winter gardens yielding splendidly, the sixth crop of alfalfa gathered and seventh blooming, over southern counties. Oranges ripe at end of month; yield most promising. Olive picking continued. Winter Nellis pears ripening. Range grass scarce over the southwestern section. Water for stock diminishing; irrigation water plentiful. All stock doing well.—*L. N. Jesunofsky.*

Arkansas.—General and heavy rains on the 18th, 19th, 24th, and 25th injured cotton to a considerable extent and retarded picking. About two-thirds of the cotton crop was secured by the close of the month, with a poor to fair yield. Corn was all housed, with generally poor yield. Sweet and late Irish potatoes were being gathered, with fair to good yields. Fall plowing made good progress during the month. Much wheat was sown and the early planted came up to a good stand.—*C. M. Strong.*

California.—Abnormally dry, clear weather prevailed most of the month, with occasional heavy fogs in the coast districts, northerly winds, and light rains. Frosts in the interior caused no damage. Conditions were very favorable for citrus fruits and for completing the season's work in fruit drying, raisin making, hay baling, and harvesting beans and corn. The orange crop was in first class condition, and the first car load was shipped east from Tulare County on the 28th.—*Alexander G. McAdie.*

Colorado.—During the closing days farming operations on the eastern slope were seriously interrupted by heavy snow and freezing weather, delaying potato digging and beet pulling, one-half of these crops being still unharvested; otherwise conditions were generally favorable to ripening and harvesting outstanding crops. In the north-central division the area plowed and seeded was smaller than usual. Except in a few localities, where the moisture was insufficient, fall wheat and rye germinated nicely.—*Frederick H. Brandenburg.*

Florida.—The temperature averaged about normal. The deficiency in precipitation exceeded an inch. The cotton crop was practically housed,

averaging about two-thirds of a crop. The month was excellent for harvesting, but unfavorable for seeding, germination, and growth of vegetables. The dry weather was particularly unfavorable over the greater part of the central district, where work was suspended. Citrus fruits colored rapidly and improved in quality; shipments increased. The crop promised to be less than that of the previous year.—*A. J. Mitchell.*

Georgia.—Conditions were about normal. Temperatures were low on the 21st–24th, killing frost general over the north, light to heavy in other sections. The rainfall was well distributed. Cotton picking was about completed; the crop was below average, but better in some districts than had been expected; bulk of crop marketed. Corn harvesting completed in some sections; yield fair to good. Potatoes good crop. Turnips poor; other minor crops about an average. Fall plowing and seeding was progressing rapidly at the close of the month; acreage of wheat to be increased.—*J. B. Marbury.*

Hawaii.—See corrigenda.

Idaho.—Harvest of sugar beets and late fruits progressed throughout the month. In elevated districts some fruit was frozen on the trees. Range stock generally found ample subsistence, but in some localities feed was short. In northern wheat growing districts moisture was sufficient for soil preparation, but elsewhere the ground was very dry most of the month.—*Edward L. Wells.*

Illinois.—The first killing frost of autumn occurred on the morning of the 12th. Corn was fully matured and no damage ensued. Farming operations were interrupted by rains, excessive in the southern district, but good progress was made in plowing and in husking and cribbing corn. Corn was yielding well in the northern and southern districts, but was below expectations in the central. The outlook for wheat was uniformly favorable. Apples were scarce and of inferior quality. The potato output was below average.—*Wm. G. Burns.*

Indiana.—In the south portion of the State frequent rains retarded wheat sowing; in the north portion, where conditions were more favorable, fall seeding was completed. Killing frosts on the 11th, 12th, and 21st shortened the tomato crop, but did no other damage. The corn crop was heavy; it dried slowly and in places was down and rotting. The potato crop was light. Tobacco was safely housed. Apples were scarce; pears were plentiful. Pastures were fairly good.—*W. T. Blythe.*

Iowa.—The first decade was very favorable for ripening latest planted corn, and the crop was wholly safe before killing frost on the 11th. About the middle of the month heavy rains caused some damage to corn that had been flattened by wind. The last decade brought good weather for cribbing and fair progress was made. Increased acreage of wheat made good stand. All minor crops were well secured and pastures were excellent at close of the month.—*John R. Sage.*

Kansas.—Wheat was in good condition, but needed rain in the central and western portions of the State. It was generally making slow growth. Corn husking was progressing satisfactorily and the crop was generally good, but it was too wet in the eastern counties, where much corn was rotting. Apple picking and potato digging were in progress, with fair crops. The fifth crop of alfalfa was stacked. Cattle and pastures were doing well.—*S. D. Flora.*

Kentucky.—Periods of rain were the 1st–3d, 10–11th, 15–20th, 24–26th,